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EXTENDED DATABASE ON MINORITIES AND WOMEN IN SCIENCE, ENGINEERING, AND TECHNOLOGY

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for

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

The database discussed in this research note was designed to be used as a resource for research concerned with the education and careers of minorities and women in quantitative fields. The 1,239 documents covered include 785 empirical studies.

The range of the literature is ninth grade through Ph.D. level, and the minority groups discussed are American Indians, Asian Americans, Blacks, Hispanics, and women. Topics covered are the physical sciences, engineering,
(OVER)

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18. Supplementary Notes (continued)

for the extended database on minorities and women in science, engineering, and technology should contact:

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20. Abstract (continued)

mathematics, computer sciences, biotechnology, and environmental sciences. The database that has been set up is multidisciplinary, containing references on all subgroups of interest, and presenting a variety of methodological viewpoints and statistical treatments.
  The database was developed using INMAGIC software, and can be accessed through key words, including: author, title, date, retention, recruitment, counseling, etc. At present, access is only possible using INMAGIC software, and the research note describes how to access the database through INMAGIC.

Accession For	
NTIS GRA&I	☑
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution/	
Availability Codes	
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EXTENDED DATABASE ON WOMEN AND MINORITIES IN SCIENCE, ENGINEERING, AND TECHNOLOGY

CONTENTS

FOREWORD

Although there is a wealth of information on the subject of the disproportionate participation of minorities and women in science, engineering, and technical (SET) careers, including computer science and mathematics, the data are distributed throughout disparate areas of specialization. This report provides an updated computerized database and is the product of Phase II of the CASET Study. It brings together the relevant references in one multi-disciplinary research resource which emphasizes empirical studies of variables closely associated with the recruitment and retention of these populations in SET careers.

The database is a resource for DOD and other researchers who seek greater knowledge and understanding of the variables which affect the education and career behaviors of women and minorities in SET fields. Use of this database can facilitate the expansion of a pool of professional SETs, through improved recruitment, selection, and retention.

EXTENDED DATABASE ON WOMEN AND MINORITIES IN SCIENCE, ENGINEERING, AND TECHNOLOGY

DESCRIPTION

The database was prepared by CASET as a deliverable in the research project, "A Study to Determine and Test Factors Impacting Upon the Supply of Minority and Women Scientists, Engineers, and Technologists for Defense Industries and Installations." Upon request CASET will furnish to ARI a computer tape, as provided for in the Contract MDA903-85-C-0342, page 3, to the following specifications:

> "9 Track 6250 bpi tape in either EBCDIC or ASCII format, plus record format containing values for each data element (including missing data codes). Each item (i.e. reference) shall constitute on "line." Each segment of the reference (e.g. author, title, date, etc.) shall constitute a separate field. The longest value shall determine the length of the field, with trailing blanks used to left justify the field."

The CASET database is currently online on a personal computer and is maintained by the INMAGIC database management system. The computerized system includes one record structure file, two printing format files, one data file with several hundred records, and one dictionary file, all in binary form. (Additionally, the system allows for the data file to be "dumped" into ASCII format quickly.) The entire database management system is transferable via diskettes or magnetic tape, according to contract specifications, at any time. Furthermore, a paper copy of the coding information for each bibliographic citation is available. At the present time, access to the database is possible only through INMAGIC software.

It is anticipated that CASET field operations will be located at NASA/Johnson Space Center for a period of two years. For further information about obtaining a database tape, diskettes, or printouts, please contact:

Dr. Nina W. Kay, Principal Investigator
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2101 NASA Road One
Houston, TX 77058
(713) 483-9315

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HOW TO USE THE CASET DATABASE

I.   Entering The System

II.   Making Changes/Additions/Deletions To The DataBase

III. Performing Searches

I.   ENTERING THE SYSTEM

The personal computer can have several systems stored on the hard disk, each with a separate directory, e.g. Inmagic, the database management system; WordPerfect, the word processing system; DOS, the Disk Operating System; etc. To access the CASET database usually takes only one command after the "C Prompt," C>. (For the following examples, the underlined print represents what the operator actually types. Words in carets indicate special keys.)

     C> cd\inmagic <return>

The cd means change directories to the Inmagic directory. When other systems have been used and a new operator is switching to the database, it will take two commands after the "C Prompt."

     C> cd\inmagic <return>
     C> inmagic <return>

The display shows the first menu below:

INMAGIC version 7.0, release 1.0

Serial # 100101

Copyright (c) 1986, Inmagic Inc., Cambridge, Mass.

All rights reserved

_____MAIN MENU_____

SELECT	FILE
MAINTAIN	TEACH
DEFINE	CHANGE
AUXILIARY	EXIT

Enter choice (? for help):

2

The options SELECT and MAINTAIN will be the only items used. MAINTAIN will be used for data entry, data changes, or data deletions and is discussed in Part II. SELECT will be used for performing searches and is discussed in Part III. The operator chooses the option by typing the first letter of the word selected and the return. The computer responds with:

Enter name of database file (up to 8 characters):

The user enters the name of the database file:

casentry <return>

The computer responds with:

Enter Work File ID code:

The user enters the initial of his/her first name: (see below for example)

l <return>

This establishes a temporary computer file (work space) for the operator to continue his/her work. The computer displays different responses depending on the choice selected. For details see Part II and Part III.

When an assignment is finished, always select the EXIT option by typing e and <return>. After two or three of these "e's" have been typed, the computer will respond once again with the "C Prompt." At this time, do the following:

C> del caset.srl

(The last letter corresponds to the initial entered as the work file ID.) This command deletes the temporary work space file.

II. MAKING CHANGES/ADDITIONS/DELETIONS TO THE DATABASE

To ensure consistent data entry, mnemonic devices have been selected to represent each factor. These abbreviations are listed in Appendix A on a coding sheet. All data entered must conform to these patterns! After entering Inmagic, the operator selects the MAINTAIN option and return. A second sub-menu appears on the screen as shown below:

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COMPOSE	LOG
ADD	TEACH
REMOVE	EXIT
BUILD	

Transaction log to screen. Enter L to change.

Enter choice (? for help):

The proper category for changes, additions, and deletions is COMPOSE. Type c and <return>.

Enter choice (? for help): c <return>

The computer responds with the following:

INMAGIC - COMPOSE
Enter retrieval key:

ACC

A. Changes
1. Type the desired accession number and return. It will take a while for the computer to find the file but then its contents will appear on the screen.
2. Move the cursor to the desired field for the data change. (Move the cursor by using the four directional keys on the right side of the keyboard, pictured below.)

7	8	9
4	5	6
1	2	3

£

3. Delete incorrect data by using the back space delete key in the upper righthand corner of the keyboard. Enter the correction.
4. Use function key 2, <F2>, located on the far lefthand side of the keyboard. The computer responds with a message about saving the file. This process takes about 2 minutes. The computer responds with the following:

4

INMAGIC - COMPOSE

Enter retrieval key:

ACC

    If the work is completed, simply <return> and the
sub-menu appears on the screen. Select the EXIT option
by typing e and <return>.   When the original menu
appears, again select the EXIT option by typing e. The
C Prompt should appear, and the operator is ready to
delete the work space file.

B.   Additions
      1.   Enter the database MAINTAIN and
            COMPOSE menus.
      2.   Type the desired accession number
            and return. (Each document in the
            database has a unique accession
            number.) After a brief wait, the
            screen will display an empty file.
            See below for a listing of fields
            into which data is entered and
            later retrieved:

INMAGIC - COMPOSE

ACC
DB/1
DR/1
AU/1
TI/1
SO/1
YR/1
SP/1
DT/1
AV/1
GO/1
OR/1
FU/1
EV/1
CO/1
ST/1
PC/1
CU/1
ED/1
CR/1
PE/1
EC/1
DA/1
CL/1
CA/1

VT/1
HS/1
COUNSELING/1
EXPECTATIONS/1
ROLE MODEL/1
RETENTION/1
RECRUITMENT/1
BARRIERS/1
SC/1
CC/1
WX/1
AB/1
AT/1
FINANCIAL SUPPORT/1
VA/1
MEASUREMENT/1
INTERVENTION/1
SEX BIAS/1
RACE BIAS/1
INTERNSHIP/1
SAT/1
GPA/1
MATH ANXIETY/1
MILITARY/1
SELF/1
VO/1
IS/1
PG/1
RN/1
CG/1

3. Type all the data and move the cursor by returning OR by using the four directional arrow keys on the righthand side of the keyboard. The correct order for data entry corresponds, for the most part, to the order on the coding sheet. See Appendix A for details of the abbreviations above.

4. To enter repeating fields, e.g. when educational factors has checks in several categories, do the following:

ED/1 **Counseling acac mo** <F10>

The computer responds with:

ED/1 Counseling acac mo
ED/2

The computer inserts a new line called ED/2. The cursor will be positioned at the beginning of this new line and more data may be added. The F10 key may be used an infinite number of times! If an extra line is put in and there is no data for it, DO NOT worry. There is no way for the operator to delete it; just move the cursor to the next line and continue entering data. When the record is saved, the computer automatically deletes unused lines.

5. When all the data for that record has been entered, use the F2 key. The computer responds with a message about saving the file. This process takes about 2 minutes. The computer responds with the following:

INMAGIC - COMPOSE

Enter retrieval key:

ACC

If the work is completed, simply <return> and the sub-menu appears on the screen. Select the EXIT option by typing e and <return>. The original menu appears and again select the EXIT option by typing e. The C Prompt should appear and the operator is ready to delete the work space file.

C. Deletions
    1. Enter the database MAINTAIN and COMPOSE menus.
    2. Type the desired accession number and return. After a brief wait, the screen will display a complete file.
    3. Hold down the Control <CTRL> key and press d. The computer responds with the following at the bottom of the screen:

Do you wish to delete this record (Y/N)?

Type y, the screen goes blank. It takes about one minute to delete the record. Then the computer

responds with the following:

INMAGIC - COMPOSE

Enter retrieval key:

ACC

If the work is completed, simply <return> and the sub-menu appears on the screen. Select the EXIT option by typing e and <return>. The original menu appears and again select the EXIT option by typing e. The C Prompt should appear and the operator is ready to delete the work space file.

III. PERFORMING SEARCHES

After entering Inmagic, the operator chooses the SELECT option and returns. The screen goes blank except for an asterisk (*) prompt, see below:

INMAGIC - SELECT

Enter command, or press RETURN for list of commands.

*

To proceed the operator types commands which direct the computer to retrieve certain records. The computer numbers each retrieval it performs and indicates the number of records found for each retrieval. Whenever the asterisk appears, the operator can type a new command.

In order to retrieve information, the operator must know which field contains the information desired. The list of fields is called the structure of the database. (See Page 17 and Appendix A.) Some fields have mnemonic devices and others are complete words. The general syntax is:

        * command field name   verb   specific data,
        * get   acc   =   000001

All commands may be abbreviated to their first letter so only, g acc=000001, retrieves the same file. Once the search is performed the computer responds with the following:

#1 number of records: 1

*

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The operator may display or print the results of the search in any order desired by using the BY option.

*<u>display by au</u> <return>   OR   *<u>d by au</u> <return>

This command displays the previous search results alphabetically by author.

When printing the results of a search, the operator must tell the computer what format to use in printing the output. CASET printouts use the ALL format.

*<u>print by au using all</u> <return>   OR
*<u>p by au u all</u> <return>

This command prints results of the search alphabetically by author using the format called ALL.

A variety of searches are possible with Inmagic using many verbs. Statements may contain the following:

<u>EQ</u> or $=$ equals (shown above)
<u>LT</u> or $\leq$ less than
<u>LE</u> or $\leq=$ less than or equals
<u>GT</u> or $\geq$ greater than
<u>GE</u> or $\geq=$ greater than or equals
<u>ST</u>   starts with (must use single or double quotes)
<u>CW</u>   contains word
<u>CS</u>   contains stem

The first five types of searches are self explanatory, but be very careful with the inequalities. If the following command is typed in:

* <u>g acc ge 000010</u> <return>

the computer will end up getting over 900 records which takes about seven or eight minutes.

The "starts with" search allows beginning phrases to locate an article.

* <u>g ti st "Women and minorities</u> <return>

This command would retrieve the following articles:

Women and Minorities in Science,
Women and Minorities in Education,
Women and Minorities Shock the Labor Market, etc.

The "contains word" and "contains stem" search are very similar and will probably be used the most often.

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Both allow the use of only 1 word (not a phrase)!

* **g au cw smith** <return>

Note: Upper case letters are not required!
This retrieves all articles authored by anyone named
Smith. The difference between the two types of
searches is in their scope. "Contains word" is a
limited search. "Contains stem" allows retrieval of
records that contain the base or root of a word.

* **g ti cs engineer** <return>

This command retrieves articles like the following:

    Engineering is Popular Field,
    Engineers Pay Scale Declines,
    Woman Engineer Sues IBM,
    Academic Research Draws Many Engineers, etc.

Searches may be further refined by using the
Boolean algebra of "OR, AND, & NOT." "Or" retrieves
the union of requests, and "And" retrieves the
intersection of requests.

* **g acc=000010 or acc=000011** <return>

This command retrieves two files, numbers 10 and 11.

* **g ti cw science and ti cw engineering** <return>

This command retrieves only articles which contain both
the words science and engineering in their titles.
    "Not" is the exclusive command.

* **g au cw ernest not ti cw math** <return>

This command retrieves all articles written by Ernest
which do not have the word math in their title.
    Commands may also be spread over two or more
lines:

* **g au cw smith** <return>

The computer responds with the following:

    #2 number of records: 17
    *

The operator now types:

* **and ti cs female** <return>

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The computer responds with the following:

    #2 number of records: 1
    *

The operator now types:

    * <u>not st cw p</u> <return>

The computer responds with the following:

    #2 number of records: 0
    No records found. Enter another command.
    *

This command retrieves all articles written by Smith
with the word female or females in their title that are
secondary studies (i.e. not primary "p" studies). In
this case, no records were found.
    When exiting the select mode, type <u>e</u> after the
asterisk prompt. Oftentimes the computer responds with
the following:

Do you wish to store the search in progress (Y/N)?

Type <u>n</u> and <return>. The screen displays the first
menu. Select the EXIT option, and the workspace file
is ready to be deleted.

FIELD NAMES

ACC - Accession Number

DB - Database

DR - Date of Retrieval

AU - Author

TI - Title

SO - Source

YR - Year

SP - Sponsor

DR - Document Type

AV - Availability

GO - Goal and Focus

OR - Settings of Research

FU - Funding of Research

EV - Evaluation Component

CO - Cost Component

ST - Type of Study

PC - Population Characteristics

CU - Cultural Factors

ED - Educational Factors

CR - Career Factors

PE - Personal Factors

EC - Economic Factors

DA - Type of Data Used

CL - Measurement (College)

CA - Measurement (Career)

VT - Measurement (Vocational/Technical)

HS - Measurement (High School)

CN - Counseling

EX - Expectations

RO - Role_Model

RE - Retention

RC - Recruitment

BA - Barriers

SC - Scores

CC - Curriculum

WX - Work Experience

AB - Abilities

AT - Attitudes

FS - Financial_Support

VA - Values

ME - Measurement

IT - Intervention

SB - Sex_Bias

RB - Race_Bias

IR - Internship

SA - Sat

GP - GPA

MA - Math_Anxiety

MI - Military

SE - Self

VO - Volume

000256
MILESKO-PYTEL D
Changing the Specifications for Engineers
AMERICAN EDUCATION 13: 1, pp. 27-31, Jan/Feb 1977.
Document: Journal
Availability: Eric EJ161508

IS - Issue

PG - Pages

RN - Report Number

CG - Contract/Grant Number

DATABASE CONTENT

The CASET database is designed for keyword searches which provide quantitative information from the growing body of literature on minorities and women in fields of science, engineering, and technology (SETs).

Although many sectors are working in disparate ways to address the problem of the underrepresented subgroups, there is at present no other national research resource specializing in this knowledge base.

Analysis of the CASET database itself provides insights into the characteristics of the research conducted by examining such variables as document type, goal and focus of documents, location of studies, publication dates, population characteristics, and factor categories. By intention, empirical studies (those studies in which data gathered by the author(s) were reported) are the primary goal and focus category, making up 63% of the total. The descriptive analysis that follows emphasizes empirical studies and comparisons between empirical studies and other documents.

An analysis of document type shows that two types dominate: (1) journal publications, representing 34% of all documents, and (2) dissertations, representing 22% of all documents. Conference papers and government reports contributed significantly to the total as well, making up 10% and 9% of the total, respectively. Also noteworthy is the paucity of industry reports, 2% of all documents.

The dominant document types of empirical studies are dissertations, 33%, and journal publications, 25%. About half (48%) of the journal articles are reports of empirical studies.

As previously mentioned, empirical studies represent the largest goal and focus category. Two other goal and focus categories verify the "quality" of the available literature: (1) anecdotal publications, 9% of the total, and (2) evaluation reports, 1% of the total. The paucity of evaluation reports indicates that studies and interventions are not tested and re-cycled for their effectiveness.

Locations of empirical studies are categorized by geographic region of the US (northeast, southeast, midwest, west, southwest, multiple regions or institutions, and unspecified region) and by setting, the "environment" where the research was actually conducted (educational, industrial,

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and governmental).

Uni-institutional empirical studies have a larger distribution in the western and the southeastern regions of the US, each making up 11% of the total. The southwest has the lowest distribution, only 6% of the total. The dominant setting for empirical research is educational, comprising 91% of the total empirical studies; there is a paucity of empirical research in industrial and governmental settings, 6% and 3% of the total, respectively. Over one-third of the research is classified as multi-institutional.

Publication dates of documents range from the 1950's to 1987. The years 1981 through 1985 represent the bulk of the publications. With the exception of a few studies on Blacks, research on minorities did not get heavily underway until around 1974. Blacks and Hispanics receive the most attention among the minorities studied, 15% and 12% of the total, respectively. Half of the studies include participants of unspecified ethnicity, thus decreasing their significance to this Study.

Publication dates appear to have "peak and valley" patterns over time, indicating periods of more and less productivity in research and publication. These peaks and valleys vary slightly with ethnicity of the sample population: the peak period for publications on American Indians is 1982-1983; for Blacks, the peaks occur in 1983 and 1985; for Asian Americans, the peaks occur in 1981 and 1985; and for Hispanics, the peak is 1985. The peak period for publications of research in which ethnicity is unspecified is 1981-1983, corresponding to productive periods of research on specified minorities.

Each of the 1239 documents in the CASET database has its contents categorized in terms of five factor categories -- cultural, educational, career, personal, and economic. Analysis of these factor categories has been done with respect to ethnicity, gender, and empirical studies versus all documents. Educational and personal factors dominate the literature, in empirical studies as well as other types of documents. The largest number of studies on one ethnic/racial group is of Blacks, 236 studies; the next largest number is of Hispanics and of Anglos, 153 studies each. The least amount of information is on Asian Americans, 70 studies. Eighty-five percent of the studies on Blacks mention educational factors, and most studies on Blacks are of male _and_ female populations. Cultural factors are more significant for Anglos and Hispanics than for any other populations,

having citations in 59% and 56% of the articles, respectively. Studies on Anglos specify gender in 76% of the documents; the largest number of "female only" studies is of Anglos. Most of the studies on American Indians do not specify gender of population. Educational and personal factors are most important in studies on American Indians; 86% of the documents cite educational factors, and 65% cite personal factors. Also noteworthy is the high percentage of publications that include participants of unspecified ethnicity, 50% of the total. A similar set of conclusions based on ethnicity, gender, and factors may be drawn for empirical studies, i.e. the largest number of empirical studies on one ethnic group is of Blacks, etc.

The five major factor categories mentioned above are further broken down into subfactors, including counseling, expectations, and barriers. These subfactors have been examined in empirical studies with respect to ethnicity and gender. Of the 785 empirical documents, the most dominant factors are educational and personal. Economic factors appear to be the least important. The subfactors or mechanisms discussed in empirical studies, listed in descending order of frequency of mention, are barriers, attitudes, role models, retention, curricula, expectations, counseling, ability, scores, recruitment. The most common barriers are educational and cultural. The fact that barriers are commonly mentioned in the literature indicates that the problem of barriers is recognized. More emphasis should be placed on recruitment efforts and on eliminating educational and cultural barriers.

Only 7% of the empirical studies discuss American Indians. Findings on educational factors dominate the literature on this population. Very little information is available on career and economic factors for the American Indian. The most common subfactors mentioned are barriers, retention, role models, and curricula.

One-hundred and thirty-four empirical documents discuss Anglos, 17% of the total. Educational factors dominate; economic factors are the least discussed. Barriers, role models, expectations, and personal attitudes are the dominant subfactors for the Anglo studies.

Blacks are the most documented minority, 22% of the total empirical studies. Educational factors are dominant, specifically educational curricula and barriers. Personal attitudes are also important, reported in 63% of the studies. Economic barriers are considered in 20% of the studies.

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There are 114 empirical studies on Hispanic Americans, representing 15% of all empirical studies. Educational curricula are discussed most often, followed by scores and personal attitudes. Barriers are the most common subfactor discussed; recruitment is the least discussed.

The number of empirical studies discussing mixed minority populations is small, 32 studies or 4% of the total empirical studies. This sample size is too small to be particularly significant; however, the proportions of occurrences of factors is consistent with other populations. Educational factors are most frequently mentioned; career and economic factors are least frequently mentioned.

There are 441 empirical studies in which sample populations were made up of both males and females. These studies represent 56% of all empirical studies, 36% of all documents. The dominant factor is educational, specifically curricula and scores. Also of significant interest is personal attitude, mentioned in 64% of these documents. Career and economic factors are the least mentioned in the literature.

Females only are studied in 151 empirical studies, representing 19% of all empirical studies. Educational factors are dominant in these studies, although career factors are also frequently mentioned: career expectations are cited in 29% of the documents, career barriers are cited in 25%, and retention is cited in 19%. The most cited subfactors for female studies are barriers, role models, and retention.

Male populations are studied in only 6 empirical studies, less than 1% of the total empirical documents. Factors are evenly distributed except for economic factors-- only 1 study on males only mentions economic factors. This sample size is too small to be significant.

The empirical studies in which gender is not specified total 187, representing a substantial 24% of all empirical studies. These studies most frequently mention educational curricula, scores, and barriers, as well as personal attitudes and ability. Because a gender breakdown is not given, it is assumed that barriers cited are ethnic/racial.

EXAMPLES OF SEARCHES

NOTE: CW = Contains Word
          * is a machine prompt for a search request
          #5 is a machine prompt naming the results of a
          search

Documents on Black Females

* <u>get PC cw Black</u>   "PC" is the field name for
                       population characteristics.
#1 number of records: 236
* <u>and PC cw F</u>   "F" = Females.
#1 number of records: 147   147 Records have black females.
* <u>get DT cw Journal</u>   "DT" is the field name for document
                       type.
#2 number of records: 419
* <u>get #1 and #2</u>   This intersects Journals with black
                       females.
#3 number of records: 34
* <u>get DT cw Audio</u>   Audio = Audiovisual material.
#4 number of records: 1
* <u>get #1 and #4</u>
#5 number of records: 0
No records found. Enter another command.
* <u>get GO st 'Empirical</u>   "GO" is the field name for goal and
                       focus, st = starts with.
#5 number of records: 785
* <u>get #1 and #5</u>
#6 number of records: 119
* <u>get YR cw 1985</u>   "YR" is the field name for year.
#7 number of records: 110
* <u>get #1 and #7</u>
#8 number of records: 10
* <u>get SO st 'JournalofNegroEducation</u>   "SO" is the field
                                       name for source.
#9 number of records: 4
* <u>get #1 and #9</u>
#10 number of records: 3
* <u>get OR cw Educational</u>   "OR" is the field name for
                           research setting.
#11 number of records: 730
* <u>get #1 and #11</u>
#12 number of records: 104
* <u>get OR cw TX</u>   TX = Texas
#13 number of records: 38
* <u>get #1 and #13</u>
#14 number of records: 5
* <u>get #1 and OR cw Multi</u>   Multi = Multi-institutional
#15 number of records: 79
* <u>get OR cw Industrial</u>
#16 number of records: 66

19

* get #1 and #16
#17 number of records: 12
* get #1 and OR cw Governmental
#18 number of records: 4
* get #1 and FU cw public   "FU" is the field name for
                                   funding.

#19 number of records: 39
* get #1 and FU cw Corporate
#20 number of records: 8
* get #1 and FU cw Non   Non = Non-Profit
#21 number of records: 12
* get #1 and EV cw Yint   "EV" is the field name for
                                   evaluation, Yint = Yes and
                                   internal evaluation.

#22 number of records: 14
* get #1 and EV cw Yext   Yext = Yes and external
                                   evaluation.

#23 number of records: 1
* get #1 and CO st "Y   "CO" is the field name for cost
                                   component, Y = yes.

#24 number of records: 7

VARIABLES	BLACK FEMALES
Journal Articles	34
Audio-Visual Articles	0
Empirical Studies	119
Publication Date:	
1971	1
1973	1
1974	2
1975	1
1977	2
1978	2
1979	1
1980	1
1981	3
1982	1
1983	2
1984	3
1985	6
1986	8
Journals:	
NSBE Journal	4
US Black Engineer	4
Journal of Negro Education	3
School Science and Mathematics	3
Science Education	2
Science Teacher	2
American Educator	1
American Journal of Education	1
American Psychologist	1
The Black Collegian	1
College and University	1
Community/Junior College Research Quarterly	1
Educational Research Quarterly	1
Engineering Education	1
Journal of Chemical Education	1
Journal of Social Issues	1
Journal of Vocational Behavior	1
Manpower	1
The Minority Engineer	1
Personnel and Guidance Journal	1
Signs	1
The Woman Engineer	1
Organizational Setting:	
Educational	104
Texas	5
Multi-institutional	79
Industrial	12
Governmental	4
Source of Funding:	

```
                 Public                          39
                 Corporate                        8
                 Non-profit                      12
       Evaluation Component:
                 Internal                        14
                 External                         1
       Cost Component                             7
```

Documents Containing Cultural Factors on American
Indian Males and Females

* get PC cw AmerIndian and PC cw M   AmerIndian = American
                                        Indian, M = Males.

#1 number of records: 35
* get PC cw AmerIndian and PC cw F
#2 number of records: 41
* get CU cw Counseling   "CU" is the field name for Cultural
                          Factors.
#3 number of records: 70
* get #1 and #3
#4 number of records: 2
* get #2 and #3
#5 number of records: 2
* get CU cw Expectations
#6 number of records: 220
* get #1 and #6
#7 number of records: 4
* get #2 and #6
#8 number of records: 8
* get CU cw Model   Model = Role Model
#9 number of records: 240
* get #1 and #9
#10 number of records: 9
* get #2 and #9
#11 number of records: 13
* get CU cw Retention
#12 number of records: 217
* get #1 and #12
#13 number of records: 8
* get #2 and #12
#14 number of records: 11
* get CU cw Recruitment
#15 number of records: 22
* get #1 and #15
#16 number of records: 0
No records found. Enter another command.
* get CU cw Barriers
#16 number of records: 344
* get #1 and #16
#17 number of records: 13
* get #17 and CU cw Diff   Diff = Differences perceived
                              in SET careers.
#18 number of records: 3
* get #17 and CU cw Race   Race = Race Bias
#19 number of records: 1
* get #2 and #16
#20 number of records: 16

```
* get #20 and CU cw Diff
#21 number of records:   5
* get #20 and CU cw Race
#22 number of records:   2
```

CULTURAL FACTORS

VARIABLES	AMERICAN INDIAN MALES	AMERICAN INDIAN FEMALES
Counseling	2	2
Expectations	4	8
Role Model	9	13
Retention	8	11
Recruitment	0	0
Barriers	13	16
Perceived Differences in SET Careers	3	5
Race Bias	1	2

Documents Containing Educational Factors on Hispanic Males and Females

* <u>get PC cw Hispanic and PC cw M</u>
#1 number of records: 78
* <u>get PC cw Hispanic and PC cw F</u>
#2 number of records: 89
* <u>get ED cw Counseling</u>   "ED" is the field name for
                              Educational Factors.
#3 number of records: 437
* <u>get #1 and #3</u>
#4 number of records: 41
* <u>get #2 and #3</u>
#5 number of records: 46
* <u>get ED cw Expectations</u>
#6 number of records: 129
* <u>get #1 and #6</u>
#7 number of records: 14
* <u>get #2 and #6</u>
#8 number of records: 17
* <u>get ED cw Model</u>
#9 number of records: 376
* <u>get #1 and #9</u>
#10 number of records: 33
* <u>get #2 and #9</u>
#11 number of records: 40
* <u>get ED cw Retention</u>
#12 number of records: 360
* <u>get #1 and #12</u>
#13 number of records: 33
* <u>get #2 and #12</u>
#14 number of records: 39
* <u>get ED cw Recruitment</u>
#15 number of records: 256
* <u>get #1 and #15</u>
#16 number of records: 27
* <u>get #2 and #15</u>
#17 number of records: 27
* <u>get ED cw Barriers</u>
#18 number of records: 442
* <u>get #1 and #18</u>
#19 number of records: 46
* <u>get #2 and #18</u>
#20 number of records: 50
* <u>get ED cw Scores</u>
#21 number of records: 402
* <u>get #1 and #21</u>
#22 number of records: 34
* <u>get #22 and ED cw SAT</u>   SAT = SAT/ACT test scores.
#23 number of records: 8

```
* get #22 and ED cw Test      Test = Specialized tests.
#24 number of records:  22
* get #1 and #21
#3 number of records:  34
* get #3 and ED cw GPA        GPA = Grade point average.
#4 number of records:  16
* get #3 and ED cw Rank       Rank = Rank in class.
#5 number of records:  4
* get #2 and #21
#6 number of records:  42
* get #6 and ED cw SAT
#7 number of records:  9
* get #6 and ED cw Test
#8 number of records:  26
* get #6 and ED cw GPA
#9 number of records:  19
* get #6 and ED cw Rank
#10 number of records:  5
* get ED cw Curriculum
#11 number of records:  669
* get #1 and #11
#12 number of records:  60
* get #2 and #11
#13 number of records:  67
```

EDUCATIONAL FACTORS

VARIABLES	HISPANIC MALES	HISPANIC FEMALES
Counseling	41	46
Expectations	14	17
Role Model	33	40
Retention	33	39
Recruitment	27	27
Barriers	46	50
Scores	34	42
SAT Test Scores	8	9
Special Test Scores	22	26
Grade Point Average	16	19
Class Rank	4	5
Curriculum	60	67

Documents Containing Career Factors on Women

* get PC cw F
#1 number of records: 813
* get #1 and CR cw Counseling   "CR" is the field name for
                                     Career Factors.

#2 number of records: 24
* get #1 and CR cw Expectations
#3 number of records: 206
* get #3 and CR cw Jc   Jc = Job/career/family expectations.
#4 number of records: 132
* get #3 and CR cw Opp   Opp = Advancement opportunity.
#5 number of records: 48
* get #1 and CR cw Model
#6 number of records: 52
* get #1 and CR cw Retention
#7 number of records: 172
* get #1 and CR cw Recruitment
#8 number of records: 106
* get #1 and CR cw Experience   Experience =   Work
                                     Experience.

#9 number of records: 117
* get #1 and CR cw Barriers
#10 number of records: 174
* and CR cw Sex   Sex = Sex Bias.
#10 number of records: 74

CAREER FACTORS

VARIABLES	ALL WOMEN
Counseling	24
Expectations	206
Job/Career/Family Expectations	132
Career Opportunities	48
Role Models	52
Retention	172
Recruitment	106
Work Experience	117
Barriers	174
Sex Bias	74

Documents Containing Personal Factors on Black Males
and Females

* get PC cw Black and PC cw M
#1 number of records: 133
* get PC cw Black and PC cw F
#2 number of records: 147
* get PE cw Ability   "PE" is the field name for Personal
                         Factors.
#3 number of records: 507
* get #1 and #3
#4 number of records: 46
* get #2 and #3
#5 number of records: 51
* get PE cw Attitudes
#6 number of records: 727
* get #1 and #6
#7 number of records: 95
* get #7 and PE cw Int   Int = Interest in SET.
#8 number of records: 41
* get #7 and PE cw Ms   Ms = Attitudes toward math/science.
#9 number of records: 38
* get #7 and PE cw Set   Set = Recognition of SET objectives
                          for a career.
#10 number of records: 23
* get #7 and PE cw Stud   Stud = Study habits.
#11 number of records: 13
* get #7 and PE cw Mot   Mot = Motivated toward achievement.
#12 number of records: 26
* get #7 and PE cw Self   Self = Self concept.
#13 number of records: 44
* get #2 and #6
#14 number of records: 103
* get #14 and PE cw Int
#15 number of records: 41
* get #14 and PE cw Ms
#16 number of records: 38
* get #14 and PE cw Set
#17 number of records: 24
* get #14 and PE cw Stud
#18 number of records: 15
* get #14 and PE cw Mot
#19 number of records: 29
* get #14 and PE cw Self
#20 number of records: 52
* get PE st "Expectation
#21 number of records: 43
* get #1 and #21
#22 number of records: 3

31

* <u>get #2 and #21</u>
#23 number of records: 6
* <u>get PE cw Values</u>
#24 number of records: 82
* <u>get #1 and #24</u>
#3 number of records: 4
* <u>get #2 and #24</u>
#4 number of records: 5

PERSONAL FACTORS

VARIABLES	BLACK MALES	BLACK FEMALES
Ability	46	51
Attitudes	95	103
Interest in SET	41	41
Math/Science Attitude	38	38
Recognition of SET		
Objectives for Career	23	24
Study Habits	13	15
Motivation to Achieve	26	29
Self Concept	44	52
Expectations	3	6
Values	4	5

<u>Documents Containing Measurements of College, Career, Vocational/Technical, and High School Variables</u>

* <u>get CL cw Rec</u>   "CL" is the field name for College
                        Measurement, Rec = Recruitment.
#1 number of records: 63
* <u>get CL cw Ret</u>   Ret = Retention.
#2 number of records: 64
* <u>get CL cw Grad</u>   Grad = Graduation.
#3 number of records: 65
* <u>get CL cw Qual</u>   Qual = Quality of life.
#4 number of records: 7
* <u>get CA cw Rec</u>   "CA" is the field name for Career
                        Measurement.
#5 number of records: 34
* <u>get CA cw Ret</u>
#6 number of records: 34
* <u>get CA cw Jobs</u>   Jobs = Job satisfaction.
#7 number of records: 27
* <u>get VT cw Rec</u>   "VT" is the field name for
                        Vocational/Technical Measurement.
#8 number of records: 4
* <u>get VT cw Grad</u>
#9 number of records: 2
* <u>get VT cw qual</u>
#10 number of records: 3
* <u>get HS cw Rec</u>   "HS" is the field name for High School
                        Measurement.
#11 number of records: 12
* <u>get HS cw Grad</u>
#12 number of records: 20
* <u>get HS cw Qual</u>
#13 number of records: 3
* <u>get VT cw Drop</u>   Drop = Drop out rate.
#14 number of records: 4
* <u>get HS cw Drop</u>
#15 number of records: 11

MEASUREMENT

	Recruit-ment	Reten-tion	Gradua-tion	Quality of Life/ Job Satifaction
College	63	64	65	7
Career	34	34	0	27
Voc/Tech	4	4	2	3
High School	12	11	20	3

APPENDIX A

CODING SHEET KEY

The following information is presented in the order data entry occurs under Inmagic's Maintain menu. The label of each field is listed first, next is the complete title associated with each field. Examples are displayed in some cases. The page numbers preceding sets of fields correspond to the coding sheet page numbers.

Coding Sheet - Page 1

ACC	Accession Number
DB/1	Database name, e.g. ERIC
DR/1	Date of Retrieval, in most cases this refers to the date of the database search.
AU/1	Author of article, e.g. Smith BE
TI/1	Title
SO/1	Source of the article. In most cases this is the name of the journal.
YR/1	Year of publication, this field may include the month and date also.
SP/1	Sponsoring organization(s). Responses here indicate who funded the research.
DT/1	Document Type. These responses include one of the following: book, book chapter, journal, government report, industry report, dissertation, unpublished manuscript, conference paper, bibliography, audio-visual, instructional materials, manual or handbook, college report, and other.
AV/1	Availability. This information indicates where copies of the article may be obtained, e.g. ERIC ED100000.

Coding Sheet - Page 2

GO/1	Goal and Focus. These responses include one of the following: empirical study, research review, theoretical review, position paper, anecdotal, case study,

A-1

evaluation report, and other.

OR/1   **Settings of Research**. The amount of information listed in this field varies across documents. The first entry is either educational, industrial, governmental, or other. This is followed by the geographic location and name of the institution where study participants were found. If the institution is educational, any or all of the following is included: (1) public, private, or proprietary, (2) HS, AS, BS, MS, or PhD (indicating highest degree available), (3) Coed, F, or M (indicating the type of student body), (4) Rely or Reln, for religious affiliation, and (5) Tvy or Tvn, for technical/vocational institute. If the institution is governmental, civilian, military, or laboratory is included as a descriptor.

Coding Sheet - Page 3

FU/1   **Funding of research**. These include public, corporate, non-profit, other, or not specified.

EV/1   **Evaluation component**. Responses are yint, yext, or n, corresponding to yes-internal, yes-external and no.

CO/1   **Cost component**. All entries in this field are preceded by y, indicating yes. Total costs, unit costs, grant amounts, etc. are added.

ST/1   **Type of study**, either p for primary or s for secondary.

Coding Sheet - Page 4

PC/1   **Population characteristics**. These include American Indian (AmerIndian), Anglo, Asian American (AsianAm), Black, Hispanic, mixed minority (mixmin), mixed minority and other (mixmino), or other. Studies where the population is not specified has been coded mixmino. Other information entered is the number of males, females, or total if this is listed.

A-2

For the next five fields, factors are coded as mentioned only (mo), unfavorable (unf), favorable (fav), or intervention (int). Each factor has categories which are listed on the coding sheet; these are entered below along with the abbreviated version used for database entry.

CU/1   **Cultural factors.**
           Counseling
                Consult Father   cf
                Consult Mother   cm
           Expectations
                Family expectations f
           Role Model
                Mother in related career   motc
                Father in related career   fatc
                Mother's educational level   mote
                Father's educational level   fate
           Retention
                Family moral support   fsup
           Recruitment
           Barriers
                Difference perceived in status
                of SET careers   diff
                Sex Bias (no abbreviation)
                Race Bias (no abbreviation)

Coding Sheet - Page 5

ED/1   **Educational factors**
           Counseling
                Academic counseling   acac
                Career counseling matching
                individuals with majors
                car
                Academic tutoring   acat
           Expectations
           Role Model
                Teacher, counselor, employer,
                professional role models
                prof
           Retention
                Support from authorities   asup
                Internships (no abbreviation)
                Peer support groups   psup
           Recruitment
                Policies on women and minorities   pol
                Support from authorities   asup
           Barriers
                Type of high school   hs
                Teacher qualifications   teach
                Sex Bias (no abbreviation)
                Race Bias (no abbreviation)

Instructional materials   instr
        Scores
                SAT/ACT   SAT
                Other specialized tests   test
                GPA (no abbreviation)
                Rank (no abbreviation)
        Curriculum
                Adequate h/s math and science subjects   hs
                Extra-curricular SET programs   xset
                Math Anxiety (no abbreviation)
                Other specialized courses   spco
                Extra-curricular non-SET activities
                xnset

        Coding Sheet - Page 7

CR/1   Career factors
        Counseling
        Expectations
                Job/career expectations   jc
                Advancement opportunity   opp
        Role Model
                Mentor   men
        Retention
                Wages and salaries wage
                Advancement opportunity   opp
                On the job peer support group   psup
        Recruitment
                Networking for job contacts   netw
        Work Experience
                Military (no abbreviation)
                Non-military   nmil
        Barriers
                Sex Bias (no abbreviation)
                Race Bias (no abbreviation)
        Coding Sheet - Page 9

PE/1   Personal factors
        Ability
                Skills for stress management   skill
                Aptitude   apt
                Hand/eye coordination   hec
                Male/female math and spatial differences
                        spadif
                Adaptive capability   adapt
        Attitudes
                Interest in SET   int
                Attitude toward math/science   ms
                Recognition of SET objectives for career set
                Study habits   stud
                Motivated toward achievement   mot
                Self-concept, image, self-confidence   self

                        A-4

Expectations
Values

Coding Sheet - Page 10

EC/1   Economic factors
        Financial Support
                Grant   gr
                Scholarship   sc
                Internship (no abbreviation)
                Work Study   work
        Barriers
                Financial support availability   avail
                Effect work on study time   work
                Sex Bias (no abbreviation)
                Race Bias (no abbreviation)

DA/1   Type of date used. Entries in this field
        are either cross-sectional (Cs),
        longitudinal (L), follow-up (FU), or
        meta-analysis.

CL/1   College Measurement. This information is
        recruitment (Rec), retention (Ret),
        dropout (Drop), stopout (Stop),
        graduation, (Grad), grade point average
        (Ga), quality of school life (Qual),
        change of attitude (Catt), transfers
        (Tran), or other.

Coding Sheet - Page 11

CA/1   Career Measurement. This information is
        recruitment (Rec), retention (Ret),
        length of service at individual company
        (Leng), job satisfaction (Jobs), or
        other.

VT/1   Vocational/Technical Measurement. This
        information is recruitment (Rec), dropout
        (Drop), graduation (Grad), grade average
        (Ga), quality of school life (Qual), or
        other.

HS/1   High School Measurement. This
        information is recruitment (Rec), dropout
        (Drop), graduation (Grad), grade average
        (Ga), quality of school life (Qual), or
        other.

A-5

Coding Sheet - Page 12

The remaining fields are "check tags" for easier key word searching. These fields have "x's" in place whenever a factor has been coded in the earlier portion of the coding sheet. In some fields no abbreviation is used.

COUNSELING/1

EXPECTATIONS/1

ROLE MODEL/1

RETENTION/1

RECRUITMENT/1

BARRIERS/1

SC/1   Scores

CC/1   Curriculum

WX/1   Work Experience

AB/1   Abilities

AT/1   Attitudes

FINANCIAL SUPPORT/1

VA/1   Values

MEASUREMENT/1

INTERVENTION/1

SEX BIAS/1

RACE BIAS/1

INTERNSHIP/1

SAT/1

GPA/1

MATH ANXIETY/1

MILITARY/1

SELF/1

A-6

The remaining fields are coded on page 1 on the coding sheet.
These represent the only fields whose order does not
correspond to those on the coding sheet.

VO/1   <u>Volume number of a journal</u>.

IS/1   <u>Issue number of a journal</u>.

PG/1   <u>Page numbers spanned by the document</u>.

RN/1   <u>Report number associated with document</u>, if any.

CG/1   <u>Contract/grant number associated with document</u>, if
        any.

APPENDIX B

CRITERIA FOR INCLUSION IN CASET DATABASE

Categories A through D include the following:

O   Membership in subgroup of American Indian, Asian American, Black, Hispanic, or women.
O   United States of American citizenship.
O   Published document, including bibliographies, presented papers, and government reports.

Additional criteria for each specific category must be:

A.   Highest Criteria
1.   About a SET subject.
2.   About a ninth grade or above, postsecondary education, vocational training, or employment.

b.   Second Highest Criteria
1.   Not about specific academic majors or occupation but is concerned with information or data about education, training, and jobs.
2.   About a ninth grade or above, postsecondary education, vocational training, or employment.

C.   Third Highest Criteria
1.   About majors or occupations which are tangential to SET, such as the life sciences (medicine, biology, nutrition, paramedical training, dentistry); geography; meteorologist; heat-transfer technician; television; and radio repair person.
2.   About a ninth grade or above, postsecondary education, vocational training, or employment.

D.   Fourth Highest Criteria
1.   About majors, courses of study, or occupations which are not SET or tangential to SET. Could be about subjects such as the social and behavioral sciences, law, business, English, foreign languages, and the non-SET trades.
2.   About a ninth grade or above, postsecondary education, vocational training, or employment.

E. Fifth Highest Criteria (useful for background or context only)

1. About other subgroups, including Anglo males.
2. About elementary and middle school.
3. Contains general information about one of the subgroups, not particularly related to education, training, or occupation.
4. Contains data or comparison of education and employments of SETs or subgroups internationally.
5. About impact of historic, political, economic, social, and cultural forces.

F. Not relevant at all.

APPENDIX C

THESAURUS HIERARCHY

Ability
    Intervention

AmerIndian

Anglo

AsianAm

Attitudes
    Intervention
    Self
        Intervention

Barriers
    Intervention
    Race Bias
    Sex Bias

Black

Career Factors
    Barriers
        Intervention
        Race Bias
        Sex Bias
    Counseling
        Intervention
    Intervention
    Expectations
        Intervention
    Military
    Race Bias
    Recruitment
        Intervention
    Retention
        Intervention
    Role Model
        Intervention
    Sex Bias
    Work Experience
        Intervention
        Military

Counseling
    Intervention

Cultural Factors
        Barriers
                Intervention
                Race Bias
                Sex Bias
        Counseling
                Intervention
        Expectations
                Intervention
        Intervention
        Race Bias
        Recruitment
                Intervention
        Retention
                Intervention
        Role Model
                Intervention
        Sex Bias

Curriculum
        Intervention
        Math Anxiety

Economic Factors
        Barriers
                Intervention
                Race Bias
                Sex Bias
        Financial Support
                Internship
                Intervention
        Internship
        Intervention
        Race Bias
        Sex Bias

Educational Factors
        Barriers
                Intervention
                Race Bias
                Sex Bias
        Counseling
                Intervention
        Curriculum
                Intervention
                Math Anxiety
        Expectations
        Grade Point Average (GPA)
        Internship
        Intervention
        Math Anxiety
                Intervention

Race Bias
Recruitment
    Intervention
Retention
    Internship
    Intervention
Role Model
    Intervention
SAT (test scores)
Scores
    Grade Point Average (GPA)
    Intervention
    SAT (test scores)
Sex Bias

Expectations
    Intervention

Financial Support
    Internship
    Intervention

Grade Point Average (GPA)

Hispanic

Internship
    Intervention

Intervention

Math Anxiety
    Intervention

Measurement

Military

Personal Factors
    Ability
        Intervention
    Attitudes
        Intervention
        Self
    Expectations
    Intervention
    Self
    Values

Population Characteristics
    AmerIndian
    Anglo
    AsianAm
    Black
    Hispanic

Race Bias
    Intervention

Recruitment
    Intervention

Retention
    Intervention

Role Model
    Intervention

SAT (test scores)
    Intervention

Scores
    Grade Point Average (GPA)
    Intervention
    SAT (test scores)

Self
    Intervention

Sex Bias
    Intervention

Values

Work Experience
    Intervention
    Military

APPENDIX D

REPORT FORMATS

A. ALL - Report format that displays all information
    for a record

    1. INMAGIC report format definition

    2. Example of report format

B. BIB - Report format that displays only
    bibliographic information

    1. INMAGIC report format definition

    2. Example of report format

INMAGIC - DEFINE Report Format
Name of format: ALL
Name of data structure: CASET
Date created: 07/03/86

A. PAGE DEFINITION
Enter physical page length (number of lines): 66
Enter top margin (number of lines): 6
Enter bottom margin (number of lines): 6
Enter maximum page width (number of characters): 75
Enter number of blank lines between records: 1
Enter whether record may be broken across pages (Y/N): N
Enter whether underline characters should print as spaces (Y/N): Y
Enter whether to pause between pages (Y/N): N

B. USER QUESTION DEFINITIONS

C. CALCULATION DEFINITIONS

D. PAGE LAYOUT

E. RECORD LAYOUT
1. @NEWPAGE
2. @PARAGRAPH, LINE 1, COLUMN 5 - 75, INDENT -2
3. ACC
4. AU, LINE + 1, SEPARATE ';'
5. TI, UPPER, LINE + 2
6. SO, LINE + 1
7. VO, END ':'
8. IS, END ','
9. PG, BEGIN 'pp.', END ','
10. YR
11. SP, LINE BOTTOM, BEGIN 'Sponsor(s): '
12. DT, LINE BOTTOM, END ' -'
13. ST, END ' -'
14. GO
15. OR, LINE BOTTOM, BEGIN 'Research Setting: '
16. FU, LINE BOTTOM, BEGIN 'Source of Funding: '
17. EV, LINE BOTTOM, BEGIN 'Evaluation Component: '
18. CO, LINE BOTTOM, BEGIN 'Cost(s) Presented: '
19. @LIST, LINE BOTTOM, COLUMN 10 - 40
20. 'Population Characteristics: '
21. @LIST, LINE SAME 19, COLUMN 41 - 75
22. PC, NUMBER
23. @LIST, LINE BOTTOM, COLUMN 10 - 40
24. 'Cultural Factors: '
25. @LIST, LINE SAME 23, COLUMN 41 - 75
26. CU, NUMBER
27. @LIST, LINE BOTTOM, COLUMN 10 - 40
28. 'Educational Factors: '

```
29. @LIST, LINE SAME 27, COLUMN 41 - 75
30. ED, NUMBER
31. @LIST, LINE BOTTOM, COLUMN 10 - 40
32. 'Career Factors: '
33. @LIST, LINE SAME 31, COLUMN 41 - 75
34. CR, NUMBER
35. @LIST, LINE BOTTOM, COLUMN 10 - 40
36. 'Personal Factors: '
37. @LIST, LINE SAME 35, COLUMN 41 - 75
38. PE, NUMBER
39. @LIST, LINE BOTTOM, COLUMN 10 - 40
40. 'Economic Factors: '
41. @LIST, LINE SAME 39, COLUMN 41 - 75
42. EC, NUMBER
43. @PARAGRAPH, COLUMN 5 - 75, INDENT -2
44. DA, LINE BOTTOM, BEGIN 'Type of Data: '
45. CL, LINE BOTTOM, BEGIN 'Measurement Restricted to College: '
46. CA, LINE BOTTOM, BEGIN 'Measurement Restricted to Career: '
47. VT, LINE BOTTOM, BEGIN 'Measurement Restricted to Vocational/
    Technical School: '
48. HS, LINE BOTTOM, BEGIN 'Measurement Restricted to High School: '
```

000256
Milesko-Pytel D

CHANGING THE SPECIFICATIONS FOR ENGINEERS
American Education 13: 1, pp.27-31, Jan/Feb 1977
Journal - P - Empirical Study
Research Setting: Educational Chicago IL Illinois Institute of
    Technology
Source of Funding: Public - HEW and Corporate - General Electric
Cost(s) Presented: Y - $75,000 annually

Population Characteristics:	1. Mixmino M F
Cultural Factors:	1. Retention F int
	2. Barriers diff int
Educational Factors:	1. Counseling acac int
	2. Counseling car int
	3. Counseling acat int
	4. Role Model prof int
	5. Retention asup int
	6. Retention Internship int
	7. Retention psup int
	8. Recruitment pol int
	9. Recruitment asup fav
	10. Barriers hs mo
	11. Barriers instr int
	12. Scores rank fav
	13. Curriculum hs unf
	14. Curriculum xset int
	15. Curriculum spco int
	16. Curriculum xnset int
Career Factors:	1. Expectations jc int
Personal Factors:	1. Ability skill int
	2. Ability apt fav
	3. Attitudes int int
	4. Attitudes ms int
	5. Attitudes set int
	6. Attitudes stud int
	7. Attitudes mot int
	8. Attitudes Self int
Economic Factors:	1. Financial Support sc int
	2. Financial Support Internship
	3. Financial Support work int

Type of Data: Cs
Measurement Restricted to College: Rec Ret Grad

```
                       INMAGIC - DEFINE Report Format
Name of format: BIB
Name of data structure: CASET
Date created: 02/02/87


A. PAGE DEFINITION
Enter physical page length (number of lines): 66
Enter top margin (number of lines): 6
Enter bottom margin (number of lines): 6
Enter maximum page width (number of characters): 85
Enter number of blank lines between records: 2
Enter whether record may be broken across pages (Y/N): N
Enter whether underline characters should print as spaces (Y/N): Y
Enter whether to pause between pages (Y/N): N

B. USER QUESTION DEFINITIONS

C. CALCULATION DEFINITIONS

D. PAGE LAYOUT
1. 'CASET Bibliography', LINE 2, COLUMN 20 - 73
2. '-------------------', LINE 3, COLUMN 20 - 73

E. RECORD LAYOUT
1. @PARAGRAPH, LINE 1, COLUMN 8 - 73, INDENT -2
2. ACC
3. AU, UPPER, SEPARATE ';', LINE + 1
4. TI, LINE + 1
5. SO, UPPER, LINE + 1
6. VO, END ':'
7. IS, END ','
8. PG, BEGIN 'pp. ', END PUNCT ','
9. YR, END '.'
10. DT, BEGIN 'Document: ', LINE + 1
11. AV, BEGIN 'Availability:  ', SEPARATE ';', LINE + 1
```

END
DATE
FILMED
DTIC
9-88